

[Charge pump structure for reducing capacitance in loop filter of a phase locked loop]

Abstract of Disclosure

A charge pump and loop filter circuit of a phase locked loop includes a resistor, a capacitor, first and second input current sources for supplying first and second currents to the circuit, a first output current source for outputting the first current from the circuit, and a second output current source for receiving the second current from the circuit. The charge pump also contains a plurality of up pulse switches and down pulse switches for controlling current flow through the circuit such that only a fraction of the current that flows through the resistor flows into and out of the capacitor for charging and discharging the capacitor. The size of the capacitor can be reduced accordingly based on the amount of current used to charge and discharge the capacitor.

Figures